

Remarks

The Rejection of Claims 1-10 Under 35 U.S.C. §103

The Examiner rejected Claims 1-10 under 35 U.S.C. §103(a) as being unpatentable over United States Patent No. 6,193,774 (Durdag et al.). Applicants respectfully traverse the rejection.

Applicants disagree with the Examiner's statement that Durdag discloses the Claim 1 element of an apparatus for removing particulate in an air stream of a thermal sand removal oven. First, Durdag discloses a solder convection oven. Solder convection ovens are very different than thermal sand removal ovens and are used in very different types of industries and operations. Col. 1, lines 13-15: "Reflow solder convection ovens are used in the production of printed circuit boards employing surface mount technology." Thus, Durdag discloses an oven used in an electronics fabricating operation, while Claim 1 teaches an oven associated with a metal-casting (i.e., heavy industry) operation.

Second, as stated in the title of the patent, Durdag discloses a gas decontamination subsystem, not an apparatus for removing particulate. Col. 1, lines 24-27: "After the heated gas passes over the printed circuit boards, various contaminants, for example, *alcohol, aldehydes, ketones, acids, rosins and resins* (emphasis added) are released into the oven and carried by the oven gas flow." Col. 5, lines 51-54: "Accordingly, the subject invention prevents the fouling of the oven by contaminants in the oven *gasses* (emphasis added) which previously condensed or deposited on the various components and the oven surfaces."

Applicants disagree with the Examiner's statement that Durdag discloses the Claim 1 element of a means for moving air in a thermal sand removal oven. As noted above, Durdag does not disclose a thermal sand removal oven. Further, Durdag discloses a passive system per the title of the patent and col. 5, lines 57-60: "The subject invention is passive because there are no moving parts and is instead driven in the preferred embodiment solely by the pressure and temperature differentials inherent in all convection ovens."

Applicants disagree with the Examiner's statement that Durdag discloses the Claim 1 element of a plurality of sand removal members. Durdag discloses decontamination baffles for removing gaseous contaminants, not particulate matter. Col. 1, lines 24-30: "After the heated gas passes over the printed circuit boards, various contaminants, for example, alcohol, aldehydes, ketones, acids, rosins and resins are released into the oven and carried by the oven gas flow. These contaminants often foul the internal components and surfaces of the convection oven to the point that a thick, viscous, tacky paste or fluid or residue is deposited..." Durdag's baffles cause the gaseous contaminants to condense by cooling the contaminants. Col. 4, lines 18-20: "Decontamination of contaminated gas 51 occurs mainly in horizontally disposed decontamination ducts 44 and 46 due to *cooling* (emphasis added) through the duct walls..." Thus, Durdag is not disclosing particulate removal.

Durdag also fails to disclose the Claim 1 element of sand removal members in an air stream resulting from a means to move air. As noted above, Durdag discloses a passive air stream.

The first requirement to establish a *prima facie* case of obviousness is some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings. As noted above, Durdag discloses an oven used in an electronics fabricating operation, while Claim 1 teaches an oven associated with a metal-casting (i.e., heavy industry) operation. Further, Durdag is solving a problem of condensing gaseous contaminants to prevent fouling of internal surfaces. The present invention, however, is solving the problem of particulate removal to protect fans/blowers from damage. Thus, Durdag is solving a very different problem than the present invention, involving a process and equipment very different than that recited in Claim 1. Therefore, there is no motivation to look to Durdag regarding the problem of removing sand from a thermal sand removal oven.

Likewise, the fact that a modification would be within the ordinary skill of the art is not proof of motivation *Ex parte Levengood*, 28 USPQ2d 1300 (Bd. Pat. App. & Inter. 1993). Applicants respectfully submit that providing removal members in a thermal oven is only made

in retrospect, in light of the present invention. That is, the obviousness rejection is based upon the Applicant's own invention characterization, not Durdag.

Further, the Examiner has not demonstrated that the cited prior art reference points to the reasonable expectation of success in the present invention, which is the second requirement of the obviousness analysis.

With respect to the third requirement to support a *prima facie* case of obviousness, as noted above, Durdag does not disclose the following elements of Claim 1: a thermal sand removal oven; at least one metal casting encased in a sand mold; an air stream, resulting from a means to move air, traversing the at least one metal casting; and a plurality of sand removal members in the air stream.

For the reasons set forth above, Applicants respectfully submit that, with respect to Claim 1, Durdag fails to satisfy the three requirements for establishing a *prima facie* case of obviousness in accordance with MPEP § 2143. Therefore, Claim 1 is patentable over Durdag and Applicants respectfully request that the rejection be withdrawn. Claims 2-4, depend from Claim 1, which is patentable in light of the cited reference. Thus, Claims 2-4 are also patentable in light of the cited reference.

Applicants submit that the arguments for Claim 1 regarding the first and second requirements for establishing a *prima facie* case of obviousness are applicable to Claim 5. With respect to the third requirement to support a *prima facie* case of obviousness, Durdag does not disclose the following elements of Claim 5: sand removal members, a thermal sand removal oven, and at least one metal casting encased in a sand mold. Thus, Applicants respectfully submit that, with respect to Claim 5, Durdag fails to satisfy the three requirements for establishing a *prima facie* case of obviousness. Therefore, Claim 5 is patentable over Durdag and Applicants respectfully request that the rejection be withdrawn.

Applicants submit that the above arguments for Claim 1 regarding the three requirements for establishing a *prima facie* case of obviousness are applicable to Claim 6. Thus, Applicants respectfully submit that, with respect to Claim 6, Durdag fails to satisfy the three requirements for establishing a *prima facie* case of obviousness. Therefore, Claim 6 is patentable over Durdag

and Applicants respectfully request that the rejection be withdrawn. Claims 7-9, depend from Claim 6, which is patentable in light of the cited reference. Thus, Claims 7-9 are also patentable in light of the cited reference.

Applicants submit that the above arguments for Claim 1 regarding the three requirements for establishing a *prima facie* case of obviousness are applicable to Claim 10. Thus, Applicants respectfully submit that, with respect to Claim 10, Durdag fails to satisfy the three requirements for establishing a *prima facie* case of obviousness. Therefore, Claim 10 is patentable over Durdag and Applicants respectfully request that the rejection be withdrawn.

Conclusion

Applicants respectfully submit that all pending claims are now in condition for allowance, which action is courteously requested.

Respectfully submitted,



C. Paul Maliszewski, P.E.
Registration No. 51,990
CUSTOMER NO. 24041
Simpson & Simpson, PLLC
5555 Main Street
Williamsville, NY 14221-5406
Telephone No. 716-626-1564

CPM
Dated: August 13, 2004